

IN THE CLAIMS

A listing of all claims and their current status in accordance with 37 C.F.R. § 1.121(c) is provided below.

1. (Original) A process for producing solid polymer particles, the process comprising:

polymerizing, in a loop reaction zone, at least one monomer to produce a fluid slurry comprising solid polymer particles in a liquid medium;

withdrawing a portion of the slurry, comprising withdrawn liquid medium and withdrawn solid polymer particles, as an intermediate product of the process;

passing the intermediate product through a heated conduit, producing a concentrated intermediate product and a vapor;

separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone;

passing the concentrated intermediate product to a receiving zone.

2. (Original) The process of claim 1 wherein at least about 90% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

3. (Original) The process of claim 1 wherein at least about 95% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

4. (Original) The process of claim 1 wherein at least about 99% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

5. (Original) The process of claim 1 wherein at least about 99.9% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

6. (Original) The process of claim 1 wherein at least about 99.99% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

7. (Original) The process of claim 1 further comprising:
passing the separated vapor from the cyclone to a filter; and
filtering fine polymer particles from the separated vapor.
8. (Original) The process of claim 1 wherein at least about 90% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
9. (Original) The process of claim 1 wherein at least about 95% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
10. (Original) The process of claim 1 wherein at least about 99% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
11. (Original) The process of claim 1 wherein at least about 99.9% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
12. (Original) The process of claim 1 wherein at least about 99.99% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
13. (Original) The process of claim 1 wherein at least about 99.999% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.
14. (Original) The process of claim 1, wherein the portion of the slurry is continuously withdrawn from the reaction zone.
15. (Original) The process of claim 1, further comprising the step of maintaining a concentration of solid polymer particles in the slurry in the zone of greater than 40 weight percent.
16. (Original) The process of claim 1, wherein the separated vaporized diluent from the cyclone is condensed without compression by heat exchange with a fluid having temperature within the range of about 32 degrees F to about 200 degrees F.
17. (Original) The process of claim 1 wherein the volume of the receiving zone is in the range of about 1000 to about 20,000 cubic feet.

18. (Original) The process of claim 1, further comprising the step of holding the polymer solids in the receiving zone for a polymer solids residence time sufficient to remove substantially all the unentrained diluent.

19. (Original) A process according to claim 21 wherein the polymer solids residence time is from about 10 seconds to about 30 minutes.

20. (Original) A process according to claim 21 wherein the polymer solids residence time is from about 30 to about 120 minutes.

21 – 27. (cancelled).